

WHAT IS CLAIMED IS:

1. A method for performing multi-counter evaluation of a text, said method comprising applying to the text a finite-state machine augmented with state value lists, where each state value list indicates which counter scores receive which values for the state, and state scores are accumulated separately for each counter, producing a list of counter scores.

2. A method for performing multi-counter evaluation of a text, said method comprising applying to the text a finite-state machine augmented with state value lists, where each state value list indicates which patterns in which counters are found when the state is entered and a list of found patterns is produced for each counter.

3. A method for constructing a finite-state machine augmented with state value lists, said method comprising the steps of:

providing an empty augmented finite-state machine that has only a start state, with no transitions and no value list;

accumulating each finite-state machine that corresponds to pattern-amount pairs into the augmented finite-state machine.

4. The method of claim 3, wherein the step of accumulating a finite-state machine that corresponds to pattern-amount pairs into the augmented finite-state machine to form a merged machine further comprises the steps of:

forming states for the merged machine that correspond to pairs of states that can be reached by starting the finite-state machine and augmented finite-state machine in the start states and applying the machines to a text in unison, with each machine advancing through each text character simultaneously;

forming states for the merged machine that correspond to one machine having halted while the other continues to advance through text;

for each merged machine state, if there is a corresponding augmented finite-state machine state and it has a value list, then copying the value list to form the value list for the new state;

for each merged machine state, if there is a corresponding finite-state machine state, it has value, and the merged machine state has no value list, then forming a new empty value list for the merged machine state;

for each merged machine state, if there is a corresponding finite-state machine state and it has value, then adding a reference to the counter corresponding to the finite-state machine and the value to the value list for the merged machine state;

for each merged machine state with a corresponding augmented finite-state machine state and a corresponding finite-state machine state, for each character in transitions from both states, forming a transition for the merged machine state, with destination the merged machine state corresponding to the states that are the destinations of the transitions;

for each merged machine state with a corresponding augmented finite-state machine state and a corresponding finite-state machine state, for each character in a transition from only one of the corresponding states, forming a transition for the merged machine state, with destination the merged machine state corresponding to the state that is the destination of the transition and the machine without the transition having halted;

for each merged machine state with a corresponding augmented finite-state machine state or a corresponding finite-state machine state but not both, for each character in a transition from the corresponding state, forming a transition for the merged machine state, with destination the merged machine state corresponding to the state that is the destination of the transition and the machine without the transition having halted.

5. A method for adding a pattern that consists of a single sequence and a corresponding pattern value from a counter to an augmented finite-state machine, said method comprising the steps of:

providing a pattern;

providing a corresponding pattern value;

providing an augmented finite-state machine having a plurality of machine states;

advancing through the machine states as by applying the machine to the sequence as a text;

if the machine would halt when applied to the sequence as a text, then adding states and transitions to the machine to prevent halting;

for the final state that would be reached by the machine supplemented with the added states and transitions, forming a state value list if the state lacks one, and adding to the state value list a reference to the counter and the pattern value.